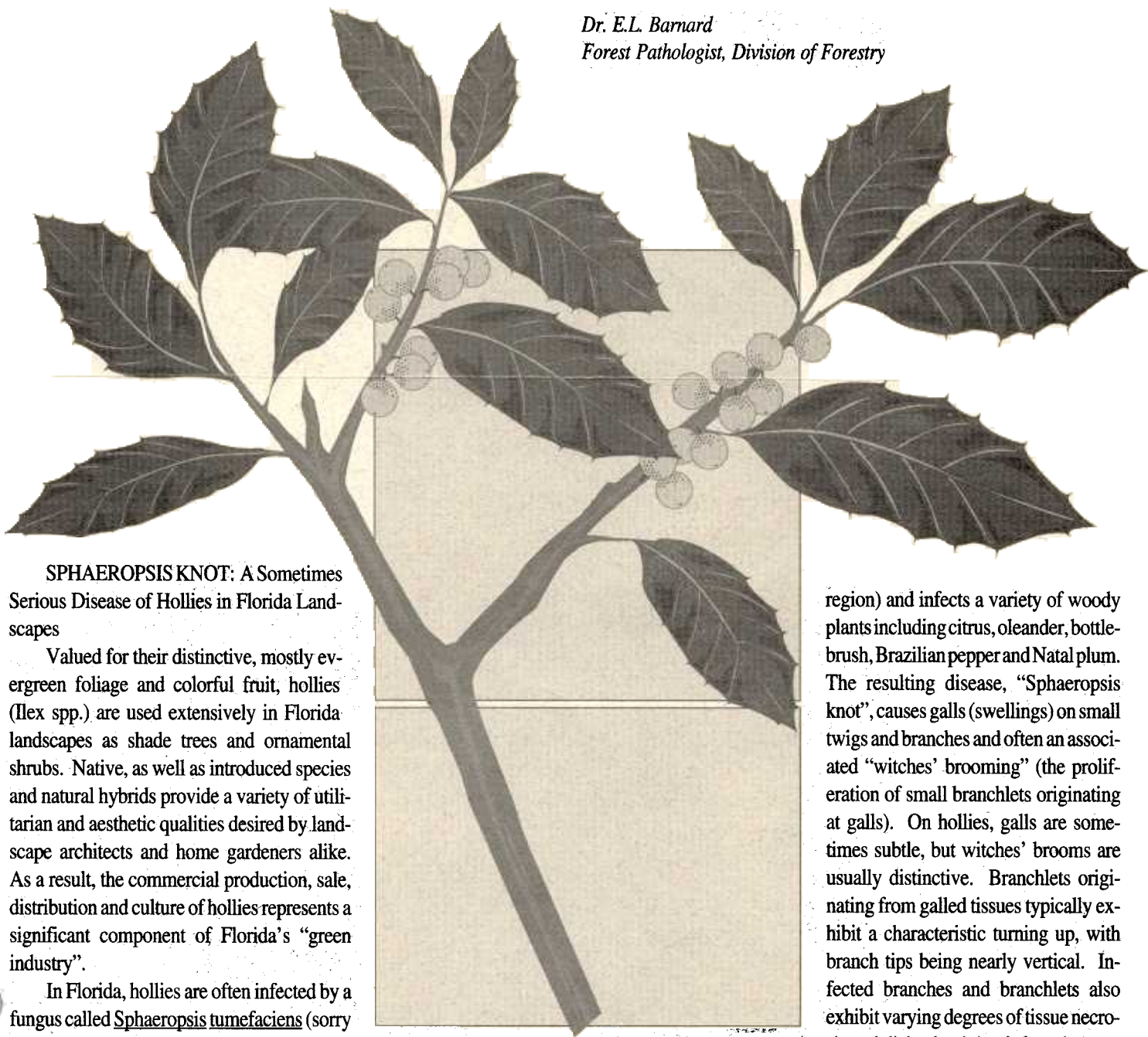


Diseases Of *Hollies* in Florida Landscapes

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SPHAEROPSIS KNOT: A Sometimes Serious Disease of Hollies in Florida Landscapes

Valued for their distinctive, mostly evergreen foliage and colorful fruit, hollies (*Ilex* spp.) are used extensively in Florida landscapes as shade trees and ornamental shrubs. Native, as well as introduced species and natural hybrids provide a variety of utilitarian and aesthetic qualities desired by landscape architects and home gardeners alike. As a result, the commercial production, sale, distribution and culture of hollies represents a significant component of Florida's "green industry".

In Florida, hollies are often infected by a fungus called *Sphaeropsis tumefaciens* (sorry, no common name). This fungus is apparently widespread in certain parts of the tropics (esp. the Caribbean

region) and infects a variety of woody plants including citrus, oleander, bottle-brush, Brazilian pepper and Natal plum. The resulting disease, "Sphaeropsis knot", causes galls (swellings) on small twigs and branches and often an associated "witches' brooming" (the proliferation of small branchlets originating at galls). On hollies, galls are sometimes subtle, but witches' brooms are usually distinctive. Branchlets originating from galled tissues typically exhibit a characteristic turning up, with branch tips being nearly vertical. Infected branches and branchlets also exhibit varying degrees of tissue necrosis and dieback, giving infected trees a generally unthrifty and debilitated appearance.

Field observations and anecdotal reports indicate that Sphaeropsis knot of holly is occasionally severe in the Tampa Bay area (Hillsborough and Pinellas Counties). East Palatka Holly (*Ilex X attenuata*) is often particularly hard hit. Multiple infections, branch dieback, and disfigurement of tree crowns render trees unsightly and some trees are apparently killed by the disease.

Sphaeropsis knot of holly often begins in lower branches of smaller (younger) trees and appears to progress upward through tree crowns with the passage of time. Infections may occur on unwounded branches, but evidence is strong that many infections are likely related to pruning cuts.

Control of Sphaeropsis knot begins with careful cultural and sanitation practices. Sphaeropsis knot can occur in nurseries and therefore is potentially spread on infected nursery stock. Accordingly, careful inspection and handling of nursery stock is essential. Pruning practices are also very important. Infected branches should be pruned off, well behind foci of infection. (Cutting through infected or galled tissues may enhance the spread of the fungus from branch to branch and tree to tree.) In addition, pruning tools should be disinfected with dilute sodium hypochlorite (household bleach) or alcohol between pruning cuts, especially when moving from tree to tree or yard to yard. Fungicidal protection may be useful in some cases, but not enough is known about disease development and fungicidal efficacy to provide specific recommendations.

Observations suggest the possibility that some hollies may be more resistant or susceptible to Sphaeropsis knot than others. Whether or not genetic differences in susceptibility account for observed disease differences in the field has not however, been experimentally confirmed. Should certain species or varieties be found to possess useful resistance, utilization of resistant stock in areas of historically high disease incidence/severity would represent an important means of disease prevention.



(Top left) Silhouette of a holly tree seriously debilitated by *Sphaeropsis tumefaciens*.

(Bottom Left) A small holly branchlet showing gall and associated witches' broom caused by *Sphaeropsis tumefaciens*.

(Above) Small holly branchlets infected by *Sphaeropsis tumefaciens*. Note swellings, upturned witches' brooms and necrotic (dead) twigs distal to infection foci.

